



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
West Coast Region
1201 NE Lloyd Boulevard, Suite 1100
PORTLAND, OR 97232-1274

Refer to NMFS No.:
WCRO-2022-00168

October 24, 2022

William Abadie
Regulatory Branch Chief U.S. Army Corps of Engineers
333 SW First Avenue
Portland, Oregon 97208-2946

Re: Endangered Species Act Section 7(a)(2) Biological Opinion and Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Response for the Columbia Crossings LLC Tomahawk Bay East Entrance Maintenance Dredge and Shoreline Rehabilitation (NWP-2021-412)

Dear Mr. Abadie:

This letter responds to your January 24, 2022, request for initiation of consultation with the National Marine Fisheries Service (NMFS) pursuant to section 7 of the Endangered Species Act (ESA) for the subject action. Your request qualified for our expedited review and analysis because it met our screening criteria and contained all required information on, and analysis of, your proposed action and its potential effects to listed species and designated critical habitat.

On July 5, 2022, the U.S. District Court for the Northern District of California issued an order vacating the 2019 regulations that were revised or added to 50 FR part 402 in 2019 (“2019 Regulations,” see 84 FR 44976, August 27, 2019) without making a finding on the merits. On September 21, 2022, the U.S. Court of Appeals for the Ninth Circuit granted a temporary stay of the district court’s July 5 order. As a result, the 2019 regulations are once again in effect, and we are applying the 2019 regulations here. For purposes of this consultation, we considered whether the substantive analysis and conclusions articulated in the biological opinion and incidental take statement would be any different under the pre-2019 regulations. We have determined that our analysis and conclusions would not be any different.

We reviewed the U.S. Army Corps of Engineers, Portland District’s (Corps) consultation request and related initiation package including the BA. Where relevant, we have adopted the information and analyses you have provided and/or referenced but only after our independent, science-based evaluation confirmed they meet our regulatory and scientific standards. We adopt by reference the following sections of the BA:

- “*Project Description*” section for the description of the proposed action, including the purpose and need;
- “*Introduction*” section for the description of the action area and environmental baseline;
- “*Species Information*” and “*Designated Critical Habitat Information*” sections for the status of species and critical habitat; and,
- “*Effects of the Action*”,
- “*Effects to Species*”,



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- “*Effects to Designated Critical Habitat*”, and “*Cumulative Effects*”

The Corps submitted the BA for this proposed action on January 24, 2022. NMFS reviewed the BA and requested additional information on the timeline of work, in-water work window variance request, sediment analysis, and additional maps and figures of the proposed action, in an email dated May 16, 2022, and received supplemental information from the Corps on May 31, 2022, June 08, 2022, and June 15, 2022. NMFS determined the supplemental information provided was sufficient to initiate consultation on June 15, 2022. On August 9, 2022, NMFS received an email from the Corps correcting an error in the BA, which stated that the area of disturbance from dredged material placement would be 475 square feet, but was intended to be 6.5 acres, which is consistent with the rest of the review (i.e. no change in scope). NMFS was also informed of a change, due to a Department of State Lands (DSL) requirement, the use of large woody material (LWM) within the sand placement area would no longer be included and the plantings would be moved to an area along the existing riprap area that would be covered by sand. An updated Joint Permit Application (JPA) and figures were also included. In an August 10, 2022 email, the Corps confirmed that no pile driving or removal would take place with the removal of the LWM placement action. This Biological Opinion (Opinion) and analysis contained herein reflects those changes.

The Corps is proposing to permit Columbia Crossings, LLC to complete a dredging and beach nourishment project at a previously authorized boat basin in a side channel of the Columbia River (river mile 107.75) in Portland, Oregon (BA, Figures 1 & 2). The project would include dredging approximately 85,000 cubic yards of shoal area within an existing boat basin and placing the dredged material within the east entrance and along the immediate shoreline and in-water areas upstream in order to re-nourish the existing beach and reduce the need for periodic dredging of the marina (BA, *Project Description*). Willows and other native riparian vegetation will also be planted along the existing riprap area where sand will be placed. An initial dredging and volume placement of 67,500 cubic yards, and a second dredging and volume placement event estimated at 17,500 cubic yards would take place within the 5-year life of the permit. Work would be conducted between September 1 and November 30. The Oregon Department of Fish and Wildlife (ODFW)-approved work window for this area is November 1 to February 28. The applicant has requested to work outside of the work window when water levels are expected to be the lowest, to allow the most amount of work to be conducted in the dry and avoid any impact to fish or water quality. This variance from the Oregon Guidelines for Timing of in-Water Work to Protect Fish and Wildlife Resources (ODFW 2022) in-water work window was authorized by the ODFW and the Department of State Lands (DSL), in an email dated March 29, 2022.

We examined the status of each species that would be adversely affected by the proposed action to inform the description of the species’ “reproduction, numbers, or distribution” as described in 50 CFR 402.02. We also examined the condition of critical habitat throughout the designated area and discuss the function of the physical or biological features essential to the conservation of the species that create the conservation value of that habitat.

The *Species Information* and *Designated Critical Habitat Information* sections as well as Table 1 of the BA list and discuss the status and Ecologically Significant Units (ESUs) and Distinct Population Segments (DPS) of each of the species and their critical habitat that may be found

within the area of potential impacts resulting from the proposed action. The 13 species listed in Table 1 of the BA, may be found within the area of potential impacts of the action. Based on our independent research and data (NMFS 2013; StreamNet 2022) NMFS confirms that the following species may occur within the area of the proposed action.

1. Upper Columbia River (UCR) spring run Chinook salmon
2. Snake River (SR) spring/summer-run Chinook salmon
3. SR fall-run Chinook salmon
4. Lower Columbia River (LCR) Chinook salmon
5. SR Sockeye salmon
6. Middle Columbia River (MCR) steelhead
7. UCR steelhead
8. Snake River Basin (SRB) steelhead
9. LCR steelhead
10. Columbia River (CR) Chum salmon
11. LCR Coho salmon
12. Eulachon
13. Green sturgeon

The Corps has determined that the project will occur within ESA designated critical habitat for all of these species except green sturgeon.

“Action area” means all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action (50 CFR 402.02). The action area in this case includes the wetted perimeter of the Columbia River between river mile 105.75 and river mile 108.25. The action area was established based on (1) the physical footprint of the project which includes the proposed dredge area, (2) the riverine disposal area at the entrance to the marina and the shoreline immediately upstream of the entrance, (3) the 1,400 foot long boat basin and (4), the maximum extent of any temporarily elevated levels of sedimentation and turbidity during dredging activities (0.5 mile upstream and 2.0 miles downstream of dredging and placement areas) (BA, *Introduction*). Reaching agreement on the description of the action area is desirable, but ultimately NMFS is responsible for this biological determination. In this case, NMFS concurs with the description of the action area.

The “environmental baseline” includes the past and present impacts of all Federal, state, or private actions and other human activities in the action area, the anticipated impacts of all proposed Federal projects in the action area that have already undergone formal or early section 7 consultation, and the impact of state or private actions which are contemporaneous with the consultation in process (50 CFR 402.02).

The *Species Information* and *Designated Critical Habitat Information* sections of the BA provide a description of the existing conditions of the action area and the aquatic resources that may be impacted as a result of the proposed action. We have adopted the information provided and/or referenced in the *Species Information* and *Designated Critical Habitat* section of the BA (USACE 2022) after evaluation confirmed they meet our regulatory and scientific standards.

Under the ESA, “effects of the action” means the direct and indirect effects of an action on the species or critical habitat, together with the effects of other activities that are interrelated or interdependent with that action, that will be added to the environmental baseline (50 CFR 402.02). Indirect effects are those that are caused by the proposed action and are later in time, but still are reasonably certain to occur.

The *Effects of the Action*, *Effects to Species*, and *Effects to Designated Critical Habitat* sections of the BA provide a detailed discussion and comprehensive assessment of the effects of the proposed action, and is adopted here. NMFS has evaluated this section and after our independent, science-based evaluation determined it meets our regulatory and scientific standards. The short-term, long-term, and cumulative effects of this proposed action are:

Short-term impacts:

- Increased turbidity during dredging
- Potential small decrease in dissolved oxygen
- Loss of benthic forage until recolonization occurs
- Potential interaction with the species in the action area during in-water work
- Entrainment of juvenile salmonids

Long-term impacts:

- Shoreline alteration
- River flow alteration
- Reduced need for maintenance dredging of the marina
- Increased shoreline shading from riparian vegetation

“Cumulative effects” are those effects of future state or private activities, not involving Federal activities, that are reasonably certain to occur within the action area of the Federal action subject to consultation (50 CFR 402.02). Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the ESA. The *Cumulative Effects* section of the BA states that the Corps is unaware of any non-federal actions occurring or likely to occur within the affected area.

The Integration and Synthesis section is the final step in our assessment of the risk posed to species and critical habitat as a result of implementing the proposed action. In this section, we add the effects of the action to the environmental baseline and the cumulative effects, taking into account the status of the species and critical habitat, to formulate the agency’s biological opinion as to whether the proposed action is likely to: (1) Reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing its numbers, reproduction, or distribution; or (2) appreciably diminish the value of designated or proposed critical habitat as a whole for the conservation of the species.

As described in the *Species Information* and *Designated Critical Habitat Information* sections of the BA, green sturgeon, eulachon, juvenile salmon from above Bonneville Dam and juvenile yearling Chinook salmon from below Bonneville Dam are not expected to be within the action area during the proposed construction dates. Very few juvenile sub-yearling Chinook salmon are

expected to be present within the action area during construction. Adult salmon and steelhead may be present within the action area during the proposed timing of the action.

The status of each species considered in this consultation varies considerably from very high risk of extinction, to moderate, to low risk of extinction. The environmental baseline is such that individual ESA-listed species in the lower Columbia River are exposed to reduced water quality, lack of suitable riparian and aquatic habitat, and restricted movement due to developed urban areas and land use practices that have limited access to historically available habitat. Many conditions in the baseline are understood to limit productivity, and specified as factors limiting productivity in a manner that impedes recovery. These stressors, as well as those from climate change, already exist and we consider these factors with the addition of any adverse effects produced by the proposed action. Major factors limiting recovery of the ESA-listed species considered in this opinion include degraded estuarine and nearshore habitat; diminished channel structure and complexity; lack of high-quality riparian areas and large wood recruitment; poor quality stream substrate; streamflow; fish passage barriers; impaired water quality; predation/competition; and disease. The proposed action will, as described above, at each episode of in-water disposal over the duration of the permit, temporarily degrade water quality and forage, and may potentially injure or kill a small number of juvenile listed species; however, these effects are expected to occur among a small enough number of fish, across the species, that no discernible increased to jeopardy risk can be found for any single ESU/DPS. The diminishment in physical or biological features (PBFs) to critical habitat are also not of permanent duration. With implementation of minimization measures included as part of the proposed action we do not anticipate that critical habitat values will be reduced in a manner that impairs conservation value of the habitat.

We anticipate that the result of economic and human population demands will both continue and increase over the duration of the proposed action, and will probably negatively affect habitat features such as water quality, which are important to the survival and recovery of the listed species. Additionally, climate change effects in the Lower Columbia River will likely include direct effects of temperature such as mortality from heat stress, changes in growth and development rates, and disease resistance. Behavioral responses include shifts in seasonal timing of important life history events, such as the adult migration, spawn timing, fry emergence timing, and the juvenile migration. Indirect effects on salmon mortality, growth rates and movement behavior are also expected to follow from changes in the freshwater habitat structure and the invertebrate and vertebrate community, which governs food supply and predation risk. Both direct and indirect effects of climate change will vary among Pacific salmon ESUs, and among populations in the same ESU. Adaptive change in any salmonid population will depend on the local consequences of climate change as well as ESU/DPS-specific characteristics and existing local habitat characteristics (NWFSC 2015).

The applicant has included several measures to minimize effects to ESA-listed species including: 1) Limiting work to Between September 1 and November 30 to allow as much work as possible to occur in the dry, to avoid outmigration of juvenile salmonids and migrating eulachon, and to allow time for reestablishment of benthic organisms prior to the next year's juvenile outmigration; 2) Keeping of the majority of dredged material in the Columbia River system by using the dredged material as beach nourishment (only the amount necessary to cover the

existing rock rip rap slope will be removed from the system); 3) Testing of the suitability for in-water disposal of the potential dredge material from within the basin will occur prior to any dredging; 4) Turbidity will be monitored per issued 401 certifications; 5) Dredging will be conducted in a manner to minimize the potential impingement or entrainment of juvenile salmonids by dredging equipment; 6) Track machinery will be used above water and employ temporary wood oak mats that would be placed on the sand to allow the machines to transit without destabilizing the bankline; 7) Temporary access measures including mats and berms would be removed prior to the end of work window and whenever river levels begin to rise; and 8) To eliminate stranding risk at the new shoreline, all slopes will be graded toward the water to allow for drainage. Only pumped sand would enter dewatering basins.

The number of juveniles that are likely to be injured or killed due to the proposed action are too few to cause a measurable effect on the long-term abundance or productivity of any affected population or to appreciably reduce the likelihood of survival and recovery of any listed species. Therefore, the proposed action will not further reduce the productivity or the likelihood of survival of the affected populations of ESA-listed species, even when combined with the environmental baseline and additional pressure from cumulative effects and climate change.

As described in the *Designated Critical Habitat Information* section of the BA, critical habitat is designated for the ESA-listed salmon and eulachon. Green sturgeon designated critical habitat is not within the action area. As discussed above, the potential adverse effects of construction to PBFs in the action area are expected to be minor and persist for a short time. The effects of construction to PBFs are expected to be minor and persist for a short time. The PBFs will recover their function quickly from dredging activities, such that no conservation parameters will be diminished. While measurable in the action area, on a critical habitat designation scale their effect will be small. The effects in the action area would not combine synergistically with any past or ongoing actions to influence the conservation role of that corridor. Therefore, the action area changes will not negatively influence the conservation value of critical habitat at the action area scale.

After reviewing and analyzing the current status of the listed species and critical habitat, the environmental baseline within the action area, the effects of the proposed action, the effects of other activities caused by the proposed action, and cumulative effects, it is NMFS' biological opinion that the proposed action is not likely to jeopardize the continued existence of the following species or destroy or adversely modify its designated critical habitat.

- UCR spring run Chinook salmon
- SR spring/summer-run Chinook salmon
- SR fall-run Chinook salmon
- LCR Chinook salmon
- SR Sockeye salmon
- MCR steelhead
- UCR steelhead
- SRB steelhead
- LCR steelhead
- CR Chum salmon

- LCR Coho salmon
- Eulachon
- Green sturgeon

INCIDENTAL TAKE STATEMENT

Section 9 of the ESA and Federal regulations pursuant to section 4(d) of the ESA prohibit the take of endangered and threatened species, respectively, without a special exemption. “Take” is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. “Harm” is further defined by regulation to include significant habitat modification or degradation that actually kills or injures fish or wildlife by significantly impairing essential behavioral patterns, including breeding, spawning, rearing, migrating, feeding, or sheltering (50 CFR 222.102). “Incidental take” is defined by regulation as takings that result from, but are not the purpose of, carrying out an otherwise lawful activity conducted by the Federal agency or applicant (50 CFR 402.02). Section 7(b)(4) and section 7(o)(2) provide that taking that is incidental to an otherwise lawful agency action is not considered to be prohibited taking under the ESA if that action is performed in compliance with the terms and conditions of this ITS.

Amount or Extent of Take

In this Opinion, NMFS determined that incidental take caused by the adverse effects of the proposed action are reasonably certain to occur and will include: 1) potential injury due to entrainment; 2) fish disturbance during construction, which may alter normal patterns of rearing behavior in the action area, and by reducing benthic forage sources in a manner that could impair survival and growth of some exposed juveniles; and 3) exposure to increased suspended sediment.

Take in the form of injury or harm from these causes cannot be accurately quantified as a number of fish. The distribution and abundance of fish within the action area cannot be predicted based on existing habitat conditions, and because of temporal and dynamic variability in population dynamics in the action area, nor can NMFS precisely predict the number of fish that are reasonably certain to respond adversely to habitat modified by the proposed action. When NMFS cannot quantify take in numbers of affected animals, we instead consider shifts to the likely extent of changes in habitat quantity and quality to indicate the extent of take.

The best available indicator for the extent of take is the area where the project will cause injury, mortality, or affect juvenile salmon forage. We define this take based on the nearshore disposal footprint, as well as the dredging prism. This indicator is proportional to the amount of take because the number of fish exposed to injury, death, or reduced levels of forage would increase with the area of habitat disturbed by the disposal, or with an expanded dredging prism. We define the maximum extent of take as an amount no more than the 6.5 acres that is the amount of habitat affected by the nearshore disposal, and the 85,000 cubic yard dredge area. This indicator is a valid reinitiation trigger because the Corps can take remedial action if the dredging and placement affects more habitat than proposed.

Exceeding these limits will trigger the reinitiation of section 7 consultation. All lethal take associated with actions under this consultation will be documented using appropriate monitoring forms and reviewed after completion of each dredging event.

Effect of the Take

NMFS has determined that the amount or extent of anticipated take, coupled with other effects of the proposed action, is not likely to result in jeopardy of the species, or destruction or adverse modification of critical habitat.

Reasonable and Prudent Measures

“Reasonable and prudent measures” are measures that are necessary or appropriate to minimize the impact of the amount or extent of incidental take (50 CFR 402.02).

The Corps shall require the applicant:

1. Minimize incidental take associated with project construction by ensuring that all BMPs described in the proposed action and this Opinion are implemented and reported, as appropriate.
2. Ensure completion of a monitoring and reporting program to confirm that the take exemption for the proposed action is not exceeded, and that the terms and conditions in this incidental take statement are effective in minimizing incidental take. The report will be submitted to NMFS no later than 60 days after the completion of each dredging event.

Terms and Conditions

In order to be exempt from the prohibitions of section 9 of the ESA, the Corps or any applicant must comply with the following terms and conditions. The Corps or any applicant has a continuing duty to monitor the impacts of incidental take and must report the progress of the action and its impact on the species as specified in this ITS (50 CFR 402.14). If the entity to whom a term and condition is directed does not comply with the following terms and conditions, protective coverage for the proposed action would likely lapse.

1. The following terms and conditions implement reasonable and prudent measure 1:
 - a. Work Window. To minimize effects to juvenile salmonids, the applicant must limit all activities conducted below ordinary high water to the in-water work window of September 1 to November 30.
 - b. Notice to Contractors. Before beginning work, the applicant must provide all contractors working on site with a complete list of EPA permit special conditions, reasonable and prudent measures, and terms and conditions intended to minimize the amount and extent of take resulting from in-water work.
 - c. Minimize Impact Area and Duration. The applicant must confine construction impacts to the minimum area and duration necessary to complete the proposed action.

- d. Turbidity. The applicant must conduct monitoring and reporting as described below. Monitoring must occur each day during daylight hours when in-water work is being conducted.
 - i. Representative background point. An observation must be taken every 2 hours at a relatively undisturbed area at least 600 feet up current from in water disturbance to establish background turbidity levels for each monitoring cycle. Background turbidity, location, time, and tidal stage must be recorded prior to monitoring down current.
 - ii. Compliance point. Monitoring must occur every 2 hours approximately 300 feet down current from the point of disturbance and be compared against the background observation. The turbidity, location, time, and tidal stage must be recorded for each sample.
 - iii. Compliance. Results from the compliance points must be compared to the background levels taken during that monitoring interval. Turbidity may not exceed an increase of 5 NTU above background at the compliance point during work.
 - iv. Exceedance. If an exceedance occurs, the applicant must modify the activity and continue to monitor every 2 hours. If an exceedance over the background level continues after the second monitoring interval, then work must stop and NMFS must be notified so that revisions to the BMPs can be evaluated.
 - v. If the weather conditions are unsuitable for monitoring (heavy fog, ice/snow, excessive winds, rough water, etc.), then operations must cease until conditions are suitable for monitoring.
 - vi. Copies of daily logs for turbidity monitoring must be available to NMFS upon request.

2. The following terms and conditions implement reasonable and prudent measure 2:
 - a. Reporting. The applicant must report all monitoring items to NMFS within 60 days of the close of any work window that had in-water work within it, including turbidity observations, length and width of dredged area, volume of sediment removed, and dates of initiation and completion of in-water work. The applicant must also report any exceedance of take covered by this opinion to NMFS immediately. The report must include a discussion of implementation of the terms and conditions in #1, above.

 - b. The applicant must submit monitoring reports to:
projectreports.wcr@noaa.gov
Attn: WCRO-2022-00168

Conservation Recommendations

Section 7(a)(1) of the ESA directs Federal agencies to use their authorities to further the purposes of the ESA by carrying out conservation programs for the benefit of the threatened and endangered species. Specifically, conservation recommendations are suggestions regarding discretionary measures to minimize or avoid adverse effects of a proposed action on listed species or critical habitat or regarding the development of information (50 CFR 402.02).

To offset adverse effects of the action (decreased forage), look for opportunities to increase and restore off-channel habitat within the Lower Columbia River.

Reinitiation of Consultation

As 50 CFR 402.16 states, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been retained or is authorized by law and if: (1) The amount or extent of incidental taking specified in the ITS is exceeded, (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion, (3) the agency action is subsequently modified in a manner that causes an effect on the listed species or critical habitat that was not considered in this opinion, or (4) a new species is listed or critical habitat designated that may be affected by the action.

NMFS also reviewed the proposed action for potential effects on essential fish habitat (EFH) designated under the Magnuson-Stevens Fishery Conservation and Management Act (MSA), including conservation measures and any determination you made regarding the potential effects of the action. This review was conducted pursuant to section 305(b) of the MSA, implementing regulations at 50 CFR 600.920, and agency guidance for use of the ESA consultation process to complete EFH consultation.

Section 305 (b) of the MSA directs Federal agencies to consult with NMFS on all actions or proposed actions that may adversely affect EFH. Under the MSA, this consultation is intended to promote the conservation of EFH as necessary to support sustainable fisheries and the managed species' contribution to a healthy ecosystem. For the purposes of the MSA, EFH means "those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity", and includes the associated physical, chemical, and biological properties that are used by fish (50 CFR 600.10). Adverse effect means any impact that reduces quality or quantity of EFH, and may include direct or indirect physical, chemical, or biological alteration of the waters or substrate and loss of (or injury to) benthic organisms, prey species and their habitat, and other ecosystem components, if such modifications reduce the quality or quantity of EFH. Adverse effects may result from actions occurring within EFH or outside of it and may include direct, indirect, site-specific or habitat-wide impacts, including individual, cumulative, or synergistic consequences of actions (50 CFR 600.810). Section 305(b) of the MSA also requires NMFS to recommend measures that can be taken by the action agency to conserve EFH. Such recommendations may include measures to avoid, minimize, mitigate, or otherwise offset the adverse effects of the action on EFH (50 CFR 600.0-5(b)).

Species with designated EFH in the action area include coho and Chinook salmon. The Corps determined that the proposed action would adversely affect EFH as follows:

- Short term increases in turbidity during each dredging event and placement of dredged material.
- Slight increase in dissolved oxygen as a result of increased BOD from dredging.
- Short term decreases of salmon prey resources.

Because the applicant has included measures to minimize effects of the action, no further recommendations are being provided.

The Corps must reinitiate EFH consultation with NMFS if the proposed action is substantially revised in a way that may adversely affect EFH, or if new information becomes available that affects the basis for NMFS' EFH conservation recommendations (50 CFR 600. 920(1)). This concludes the MSA consultation.

This letter underwent pre-dissemination review using standards for utility, integrity, and objectivity in compliance with applicable guidelines issued under the Data Quality Act (section 515 of the Treasury and General Government Appropriations Act for Fiscal Year 2001, Public Law 106-554). The biological opinion will be available through NOAA Institutional Repository [<https://repository.library.noaa.gov/>]. A complete record of this consultation is on file at the Oregon Washington Coastal Office in Portland, Oregon.

Please contact Kailee McKinney, ESA Consultation Biologist, Oregon Washington Coastal Office at 503.872.2854 or kailee.mckinney@noaa.gov if you have any questions concerning this consultation, or if you require additional information.

Sincerely,



Kim W. Kratz, PhD
Assistant Regional Administrator
Oregon Washington Coastal Office

cc: Brielle Cummings, USACE
Melody White, USACE

References

- NMFS. 2012. Endangered Species Act Section 7 Formal Programmatic Opinion, Letter of Concurrence, and Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Consultation for Revisions to Standard Local Operating Procedures for Endangered Species to Administer Actions Authorized or Carried Out by the U.S. Army Corps of Engineers in Oregon (SLOPES IV In-water Over-water Structures) National Marine Fisheries Service. Portland, Oregon.
- NMFS. 2013. ESA Recovery Plan for Lower Columbia River Coho Salmon, Lower Columbia River Chinook Salmon, Columbia River Chum Salmon, and Lower Columbia River Steelhead. National Marine Fisheries Service, Northwest Region.
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<https://www.dfw.state.or.us/lands/inwater/Oregon%20In-water%20Work%20Guidelines%20January%202022.pdf>
- StreamNet. 2022. Query of StreamNet Mapper: All Fish Distribution within the Columbia River. Data accessed July 19, 2022 at:
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